



United States Department of Agriculture
Natural Resources Conservation Service

AQAC-Energy Interactions



AQAC–Energy Relationships

- Type and amount of energy use can have significant impacts on air quality
- Likewise, addressing AQAC concerns can have significant impacts on energy



Energy Impacts on AQAC

- Combusting fuels to release energy also releases air pollutants
 - Some fuels do burn cleaner than others
- Energy from non-combustion sources (i.e., solar) generally does not release air pollutants



Example – Energy Impacts on AQAC

- A petroleum diesel-fired irrigation engine will release:
 - NO_x
 - PM
 - VOCs
 - CO₂
 - SO_x
- A biodiesel-fired irrigation engine will release:
 - NO_x (same or more)
 - PM (less)
 - VOCs (less)
 - CO₂ (maybe more, but from renewable source)



AQAC Impacts on Energy

- Some practices/activities to address AQAC concerns require additional energy input
- If the additional energy is from combustible fuels, you may not come out ahead on AQAC overall!



Examples – AQAC Impacts on Energy

- Watering roads to manage PM requires fuel use by the applicator (i.e., water truck) and energy to pump the water into the applicator
- Many add-on control devices (i.e., biofilters) require air flow or heat, so you need energy to move the fan or provide heat



Air Quality, Climate Change and Energy (ACE) Working Group

- Coordination/Integration of Venture Goals within the NRCS
- 5 Focus Areas
 - Policy
 - Planning and Programs
 - Technology and Training
 - Data Integration
 - Communication
- Report presented to leadership in April



Air Quality, Climate Change and Energy (ACE) Course

- AgLearn course
- Available later this summer
- Covers basic issues associated with agriculture and air quality, climate change, and energy
- Will be a prerequisite to Boot Camp
- Goal is for entire agency to take the course at some point





Air Quality, Climate Change & Energy

Other Courses Coming

- Why Should We Care About Air Quality?
- Why Should We Care About Energy?
- Air Quality Resource Concerns
- Energy Basics
- Greenhouse Gases and Carbon Sequestration
- Energy and Agriculture



Summary

- AQAC and Energy are intertwined
 - You can't consider one without the other
- Look for the “win-win” opportunities
 - Energy efficiency projects – reduced energy use and reduced air pollutant generation (if currently using combustible fuels)

